

**ENVIRONMENTAL ASSESSMENT
FOR THE CONVERSION OF A
PORTION OF GENESEE VALLEY PARK
UNDER THE LAND AND WATER CONSERVATION FUND ACT
AS A RESULT OF THE
BROOKS LANDING REVITALIZATION PROJECT**

Appendix J:
Excerpts from Traffic Study

4. Traffic

a. Description

Six major streets are located within the study area. South Plymouth Avenue and Scottsville Road are classified as principal arterial roads providing two-way traffic flow. Genesee Street, Brooks Avenue, and Elmwood Avenue are considered minor arterial roads providing two-way traffic flow. Genesee Park Boulevard is classified as a local collector road providing two-way traffic flow. There are 5 signalized intersections within the project limits.

Manual turning movement counts were conducted at the 5 signalized intersections on September 15 and 16, 1999 for typical weekday morning and evening peak hours. The counts were conducted at the following intersections:

Signalized Intersections:

- South Plymouth Avenue/Brooks Avenue
- South Plymouth Avenue/Elmwood Avenue
- Brooks Avenue/Genesee Street
- Genesee Street/Genesee Park boulevard
- Genesee Street/Elmwood Avenue/Scottsville Road

The counts were performed in 15-minute increments between 6:00 AM and 9:00 AM during the weekday morning and between 3:00 PM and 6:00 PM during the weekday evening. The weekday morning peak hour occurred between 7:30 AM and 8:30 AM and the weekday evening peak hour occurred between 4:30 PM and 5:30 PM. Existing traffic volumes for the studied intersections are provided in Appendix C.

b. Geometry

The existing horizontal alignment on South Plymouth Avenue is crowned along the center of the pavement. The existing vertical alignment is relatively flat with an approximate grade of +0.35 percent. The existing approximately 36-foot roadway provides two travel lanes, which provides adequate width for vehicular travel.

The existing horizontal alignment on Genesee Street is crowned along the center of the pavement. The existing vertical alignment has grades ranging from -1.10 percent to +0.26 percent. The existing approximately 36 to 44 foot roadway provides two travel

lanes which provides adequate width for vehicular travel and parking lanes along both sides of Genesee Street.

The existing horizontal alignment on Brooks Avenue is crowned along the center of the pavement. The existing vertical alignment has grades ranging from +0.5 percent to -4.75 percent. The existing approximately 44-foot roadway provides two travel lanes, which provides adequate width for vehicular travel.

The existing horizontal alignment on Genesee Park Boulevard is crowned along the center of the pavement. The existing vertical alignment is relatively flat. The existing approximately 22 foot roadway provides two travel lanes which provides adequate width for vehicular travel.

The existing horizontal alignment on Elmwood Avenue is crowned along the center of the pavement. The existing vertical alignment has an approximate grade of -2.00 percent. The existing approximately 55-foot roadway provides five travel lanes, which provides adequate width for vehicular travel.

The existing horizontal alignment on Scottsville Road is crowned along the center of the pavement. The existing vertical alignment has an approximate grade of +0.80 percent. The existing approximately 40-foot roadway provides three travel lanes, which provides adequate width for vehicular travel.

c. System Capacity

South Plymouth Avenue to the north of Brooks Avenue and north of Elmwood Avenue carried an Average Daily Traffic (ADT) volume of approximately 9,386 vehicles per day (vpd) in 1999 and 12,438 vpd in 2001, respectively. Genesee Street to the north of Brooks Avenue and north of Genesee Park Boulevard carried an ADT volume of approximately 10,183 vpd and 5,152 vpd in 1999 respectively. Books Avenue to the west of Genesee Street carried and ADT volume of approximately 8,706 vpd in 1999. Elmwood Avenue to the west of Plymouth Avenue carried and ADT volume of approximately 17,098 vpd in 1999. Scottsville Road to the south of Elmwood Avenue carried and ADT volume of approximately 11,264 vpd in 1999.

This section of the City typically experiences an annual increase in traffic of 2.0 percent per year. This growth rate was used to determine the estimated daily traffic volumes for ETC+10 and

ETC+20. The estimated daily traffic volumes for these segments of Highland Avenue are shown in the following table.

Table 2 - Estimated Daily Traffic Volumes

<u>Segment</u>	<u>Traffic Volume</u>		
	<u>Existing (ETC)</u>	<u>ETC+10</u>	<u>ETC+20</u>
South Plymouth			
N. of Brooks Avenue	9,386	11,263	13,140
N. of Elmwood Avenue	12,438	14,926	17,413
Genesee Street			
N. of Brooks	10,183	12,220	14,256
N. of Genesee Park Boulevard	5,152	6,182	7,213
Books Avenue			
W. of Genesee Street	8,706	10,447	12,188
Elmwood Avenue			
W. of South Plymouth Avenue	17,098	20,518	23,937
Scottsville road			
S. of Elmwood Avenue	11,264	13,517	15,770

Level of Service

To evaluate the implications of abandoning South Plymouth Avenue from Brooks Avenue to Elmwood Avenue and developing Brooks Landing, the operating capacity of both signalized and unsignalized intersections located within the project corridor were evaluated for the following scenarios:

- Existing Condition (base AM and PM peak hour condition for comparison);
- Existing Condition-Plymouth Modified (abandonment of Plymouth Avenue and rerouting of existing vehicular traffic);
- Future Traffic Condition w/o Improvements (Existing traffic volumes rerouted from Plymouth Avenue and Brooks Landing development traffic added into the adjacent transportation system); and
- Future Traffic Conditions with Improvements (same condition as stated previously including proposed mitigation measures).

The Level of Service (LOS) analysis methodology for analyzing signalized and unsignalized intersections is documented in the

Highway Capacity Manual (Transportation Research Board, Washington, D.C., 2000). SYNCHRO software was used to analyze each of the studied intersections. Levels range from A to F, with A describing traffic operations with little or no delay and F describing traffic operations with long delays. Level of Service for signalized intersections is expressed in terms of control delay. Level of Service for two-way stop-controlled unsignalized intersections is expressed in terms of average control delay per vehicle.

The following table presents a summary of the weekday morning and weekday evening peak hour signalized intersection capacity analysis results for existing, modified, future w/o Improvements, and future w/ Improvements.

**Table 3 - Peak Hour Level of Service Summary
Signalized Intersections**

	Existing Conditions		Modified Conditions		Future Condition w/o Improvements		Future Condition w/ Improvements	
	AM	PM	AM	PM	AM	PM	AM	PM
<u>APPROACH</u>								
Elmwood Avenue @ Plymouth Avenue								
Eastbound L	A	B	A	A	A	A	A	A
Eastbound T	A	A	A	A	A	A	A	A
Westbound T	B	C	A	A	A	B	A	B
Northbound LT	D	D	D	D	D	D	D	D
Northbound R	D	D	D	D	D	D	D	D
Southbound L	D	D	D	D	D	D	D	D
Southbound T	D	D	D	D	D	D	D	D
Overall	B	C	A	A	A	A	A	A
Elmwood Avenue @ Genesee Street								
Westbound T	C	C	C	C	C	C	C	C
Westbound R	D	F	D	F	D	F	B	B
Eastbound L	D	D	D	D	D	D	B	C
Eastbound T	C	B	E	C	E	C	C	C
Southbound L	B	A	C	B	D	A	A	A
Southbound LT	-	-	-	-	-	-	A	A
Southbound T	A	A	A	A	A	A	-	-
Southbound R	-	-	-	-	-	-	A	A
Overall	C	D	D	F	D	F	B	B
Genesee Street @ Genesee Park Boulevard								
Eastbound L	D	D	C	C	C	C	C	D
Eastbound R	A	A	A	A	A	A	A	A
Northbound LT	A	A	A	A	A	A	A	A
Southbound T	D	D	E	F	F	F	D	D
Overall	B	B	C	D	D	E	B	C

Brooks Avenue @ Genesee Street

Eastbound L	A	A	A	A	A	A	A	A
Eastbound T	A	A	A	A	A	A	A	A
Westbound L	A	A	A	B	B	B	B	B
Westbound T	A	A	A	A	A	A	A	A
Northbound L	B	B	B	B	B	C	B	C
Northbound T	B	B	C	D	C	D	C	D
Southbound L	C	C	B	B	C	C	C	C
Southbound T	B	B	B	B	B	B	B	B
Overall	B	B	B	C	B	C	B	C

Brooks Avenue @ Plymouth Avenue

Eastbound L	B	B	-	-	-	-	-	-
Eastbound R	B	C	-	-	-	-	-	-
Northbound L	B	B	-	-	-	-	-	-
Northbound T	B	A	-	-	-	-	-	-
Southbound T	B	B	-	-	-	-	-	-
Southbound R	B	C	-	-	-	-	-	-
Overall	B	C	-	-	-	-	-	-

As shown, the signalized intersections currently operate at an overall Level of Service "C" or better during each peak hour studied with the exception of the Elmwood Avenue/Genesee Street/Scottsville Road intersection. This intersection currently operates at an overall Level of Service "D" during the weekday evening peak hour. With the abandonment of South Plymouth Avenue, the Elmwood Avenue/Genesee Street/Scottsville Road intersection is projected to fail during the weekday evening peak hour. Although not obvious from the printouts, the Elmwood Avenue/Genesee Street/Scottsville Road and Genesee Street/Genesee Park Boulevard intersections operate off of one controller. Therefore it is evident that when the Genesee Street/Genesee Park Boulevard intersection breaks down, the resultant is that the Elmwood Avenue/Genesee Street/Scottsville Road intersection will breakdown as well.

With the realignment of Brooks Avenue with South Plymouth Avenue, the existing intersection will be eliminated and a traffic signal will not be required. With the proposed improvements in place, the intersections located in the study area are projected to operate at an overall Level of Service "C" or better. Refer to Appendix C for the SYNCHRO printouts.

The following table presents a summary of the weekday morning and weekday evening peak hour unsignalized intersection capacity analysis results for existing, modified, future w/o Improvements, and future w/ Improvements.

**Table 4 - Peak Hour Level of Service Summary
Unsignalized Intersection**

	Existing Conditions		Modified Conditions		Future Condition w/o Improvements		Future Condition w/ Improvements	
	<u>AM</u>	<u>PM</u>	<u>AM</u>	<u>PM</u>	<u>AM</u>	<u>PM</u>	<u>AM</u>	<u>PM</u>
<u>APPROACH</u>								
Genesee Street @ Drive #1								
Westbound L	-	-	-	-	-	-	C	D
Westbound LT	-	-	-	-	C	D	-	-
Westbound R	-	-	-	-	-	-	B	C
Southbound L	-	-	-	-	A	A	A	A
Brooks Avenue @ Drive #2/Drive #3								
Northbound R	-	-	-	-	B	B	B	B
Southbound R	-	-	-	-	B	B	A	B
Genesee Street @ Drive #4								
Westbound LT	-	-	-	-	C	C	C	C
Southbound LT	-	-	-	-	A	A	A	A

As shown, each individual movement at the site driveways is anticipated to operate at Level of Service "D" or better for each peak hour studied. Refer to Appendix C for the SYNCHRO printouts.

d. **Pavement Delineation**

Pavement markings along South Plymouth Avenue include an existing double yellow line that separates opposing traffic movements. The existing pavement marking configuration at the intersection of South Plymouth Avenue/Brooks Avenue consists of a northbound and eastbound left turn lane with a southbound right turn lane.

Pavement markings along Genesee Street and Brooks Avenue include existing double yellow lines that separate opposing traffic movements. The existing pavement marking configuration at the intersection of Genesee Street/Brooks Avenue consists of an eastbound and westbound left turn lane.

Pavement markings along Genesee Park Boulevard include existing double yellow lines that separate opposing traffic movements. The existing pavement marking configuration at the

intersection of Genesee Park Boulevard/Genesee Street consists of eastbound left and right turning lanes.

Pavement markings along Elmwood Avenue include existing double yellow lines that separate opposing traffic movements. The existing pavement marking configuration at the intersection of Elmwood Avenue/Genesee Street/Scottsville road consists of a northeast bound and southbound left turn lane and a westbound right turn lane.

All existing signage was reviewed and appears to be adequate. Some signs may need to be relocated due to the proposed project. Monroe County Traffic will review all signage and pavement markings as part of the project.

There are currently no provisions for bicyclists along Highland Avenue.

e. Bus Routes

South Plymouth Avenue, Genesee Street, Brooks Avenue, Genesee Park Boulevard, Elmwood Avenue, and Scottsville Road are designated bus routes according to the Rochester-Genesee Regional Transportation Authority/Regional Transit Service. South Plymouth Avenue is used for travelling purposes for RTS bus routes 19,18,6, and 4. RTS bus routes 19,12, and 4 use Genesee Street that consist of four RTS bus stops within the study area. RTS bus route 4 uses Brooks Avenue that has two RTS bus stops located within the study area. Genesee Park Boulevard is used by RTS bus route 4. Elmwood Avenue consists of two RTS bus stops within the study area and is used by bus routes 19,18,12, and 4. Scottsville Road is used by RTS bus route 8 and there are no bus stops located within the study area.

There is one school and one college in the vicinity of the Brooks Landing project, which use buses as a source of transportation. The schools likely use the roadways involved in this study for a portion of their trips.

f. Parking Regulations

Parking is prohibited on both sides of South Plymouth Avenue, Brooks Avenue, Elmwood Ave, and Genesee Park Boulevard with in the study area.

Limited on street parking is allowed on Genesee Street including one hour parking between 8:00 AM to 7:00 PM. At the intersection clear zone of Genesee Street/Elmwood Avenue/Scottsville Road parking is prohibited. Genesee Street is signed as a Snow Emergency Route, at which times no parking is allowed. See Figure on following page for existing parking restrictions on Genesee Street. On Scottsville Road parking is prohibited between the hours of 7:00 AM to 9 AM and from 4 PM to 6 PM.

h. Area Schools

There are two schools within a close proximity to the Brooks Landing Project and use the streets within the boundaries of the project to reach their destination. The St. Monica's School is located just west of the Genesee Street and north of Brooks Avenue. The University of Rochester is located just east of South Plymouth Avenue and the Genesee River. Both of these schools rely on buses to transport students.

i. Accidents

This accident analysis was conducted for the Brooks Avenue, Genesee Street, South Plymouth Avenue, and Elmwood Avenue corridors in the City of Rochester. The study range included the following intersections: Genesee Street/Scottsville Road & Elmwood Avenue, Genesee Street/Genesee Park Boulevard, Genesee Street/Weldon Street, Genesee Street/Oak Hill View, Genesee Street/Congress Avenue, Genesee Street/Terrace Park, Genesee Street/Brooks Avenue, Brooks Avenue/South Plymouth Avenue, and Elmwood Avenue/South Plymouth Avenue & Genesee Valley Park. The study range also included the following midblock sections: Genesee Street from Mineola Street to Elmwood Avenue, Scottsville Road from Winbourne Road to Genesee Street, Elmwood Avenue from Genesee Street to South Plymouth Avenue, Genesee Park Boulevard from Custer Street to Genesee Street, Genesee Street from Genesee Park Boulevard to Arvine Heights, Weldon Street from Custer Street to Genesee Street, Arvine Park from Arvine Park to Genesee Street, Genesee Street from Spruce Avenue to Grandview, Congress Avenue from Custer Street to Genesee Street, Genesee Street from Congress Avenue to Terrace Park, Terrace Park from Genesee Street to Woodbine, Genesee Street from Terrace Park to Brooks Avenue, Genesee Street from Brooks Avenue to Barton Street, Brooks Avenue from Marsh Street to Genesee Street, Brooks Avenue from Genesee Street to South Plymouth Avenue, South Plymouth

Avenue from Brooks Avenue to Barton Street, South Plymouth Avenue from Brooks Avenue to Elmwood Avenue, and Elmwood Avenue from South Plymouth Avenue to Genesee River Bridge. Brooks Avenue is an urban minor arterial that consists of two lanes without parking along either side of the street. Genesee Street is an urban principal arterial that consists of two lanes with limited parking along both sides of the street. South Plymouth Avenue is an urban principal arterial that consists of two lanes without parking along either side of the street. Elmwood Avenue is an urban minor arterial that consists of four lanes without parking along either side of the street.

Accident data for the most recent 50-months, from January 1, 1998 through February 28, 2002, was obtained from the City of Rochester Police Department and the Monroe County Sheriff's Department. During this period, a total of 163 accidents occurred within the Brooks Landing study area. Table 4 summarizes the type of accident that occurred at each existing intersection. The table represents those intersections and midblocks that had at least one accident during the study period.

Table 5 - Type of Accident by Year

<u>Intersection</u>	<u>Period</u>	<u>Fatality</u>	<u>Injury</u>	<u>Property Damage Only (PDO)</u>
Genesee Street @ Scottsville Rd./Elmwood Ave.	1/1/98-12/31/98	0	0	3
	1/1/99-12/31/99	0	0	0
	1/1/00-12/31/00	0	0	1
	1/1/01-12/31/01	0	2	0
	1/1/02-2/28/02	0	0	1
Genesee Street @ Genesee Park Boulevard	1/1/98-12/31/98	0	0	0
	1/1/99-12/31/99	0	1	0
	1/1/00-12/31/00	0	1	0
	1/1/01-12/31/01	0	0	0
	1/1/02-2/28/02	0	0	0
Genesee Street @ Weldon Street	1/1/98-12/31/98	0	0	0
	1/1/99-12/31/99	0	0	1
	1/1/00-12/31/00	0	0	0
	1/1/01-12/31/01	0	0	0
	1/1/02-2/28/02	0	0	0
Genesee Street @ Oak Hill View	1/1/98-12/31/98	0	1	0
	1/1/99-12/31/99	0	0	0
	1/1/00-12/31/00	0	0	0
	1/1/01-12/31/01	0	0	0
	1/1/02-2/28/02	0	0	0

Table 5 - Type of Accident by Year (Continued)

<u>Intersection</u>	<u>Period</u>	<u>Fatality</u>	<u>Injury</u>	<u>Property Damage Only (PDO)</u>
Genesee Street @ Congress Avenue	1/1/98-12/31/98	0	1	0
	1/1/99-12/31/99	0	1	0
	1/1/00-12/31/00	0	0	0
	1/1/01-12/31/01	0	0	2
	1/1/02-2/28/02	0	0	0
Genesee Street @ Terrace Park	1/1/98-12/31/98	0	0	0
	1/1/99-12/31/99	0	0	1
	1/1/00-12/31/00	0	0	1
	1/1/01-12/31/01	0	0	1
	1/1/02-2/28/02	0	0	0
Genesee Street @ Brooks Avenue	1/1/98-12/31/98	0	1	9
	1/1/99-12/31/99	0	1	2
	1/1/00-12/31/00	0	0	4
	1/1/01-12/31/01	0	1	10
	1/1/02-2/28/02	0	0	0
Brooks Avenue @ South Plymouth Avenue	1/1/98-12/31/98	0	1	2
	1/1/99-12/31/99	0	0	1
	1/1/00-12/31/00	0	1	3
	1/1/01-12/31/01	0	0	6
	1/1/02-2/28/02	0	0	1
Elmwood Avenue @ S. Plymouth Ave./Gen. Valley Pk.	1/1/98-12/31/98	0	0	5
	1/1/99-12/31/99	0	1	3
	1/1/00-12/31/00	0	2	12
	1/1/01-12/31/01	0	0	2
	1/1/02-2/28/02	0	0	0
Genesee Street: Mineola St. to Elmwood Ave.	1/1/98-12/31/98	0	0	1
	1/1/99-12/31/99	0	0	0
	1/1/00-12/31/00	0	0	0
	1/1/01-12/31/01	0	0	0
	1/1/02-2/28/02	0	0	0
Scottsville Road: Winbourne Rd. to Genesee St.	1/1/98-12/31/98	0	0	0
	1/1/99-12/31/99	0	0	1
	1/1/00-12/31/00	0	0	2
	1/1/01-12/31/01	0	1	0
	1/1/02-2/28/02	0	0	0
Elmwood Avenue: Genesee St. to S. Plymouth Ave.	1/1/98-12/31/98	0	0	1
	1/1/99-12/31/99	0	0	4
	1/1/00-12/31/00	0	1	4
	1/1/01-12/31/01	0	0	1
	1/1/02-2/28/02	0	0	0

Table 5 - Type of Accident by Year (Continued)

<u>Intersection</u>	<u>Period</u>	<u>Fatality</u>	<u>Injury</u>	<u>Property Damage Only (PDO)</u>
Genesee Park Boulevard: Custer St. to Genesee St.	1/1/98-12/31/98	0	0	0
	1/1/99-12/31/99	0	0	0
	1/1/00-12/31/00	0	1	2
	1/1/01-12/31/01	0	0	0
	1/1/02-2/28/02	0	0	0
Genesee Street: Gen. Pk. Blvd. to Arvine Hgts.	1/1/98-12/31/98	0	0	0
	1/1/99-12/31/99	0	0	0
	1/1/00-12/31/00	0	0	1
	1/1/01-12/31/01	0	0	0
	1/1/02-2/28/02	0	0	0
Weldon Street: Custer St. to Genesee St.	1/1/98-12/31/98	0	0	0
	1/1/99-12/31/99	0	0	0
	1/1/00-12/31/00	0	0	0
	1/1/01-12/31/01	0	0	1
	1/1/02-2/28/02	0	0	0
Arvine Park: Arvine Park to Genesee St.	1/1/98-12/31/98	0	0	1
	1/1/99-12/31/99	0	0	0
	1/1/00-12/31/00	0	0	0
	1/1/01-12/31/01	0	0	0
	1/1/02-2/28/02	0	0	0
Genesee Street: Spruce Ave. to Grandview	1/1/98-12/31/98	0	0	1
	1/1/99-12/31/99	0	1	0
	1/1/00-12/31/00	0	0	0
	1/1/01-12/31/01	0	0	0
	1/1/02-2/28/02	0	0	0
Congress Avenue: Custer St. to Genesee St.	1/1/98-12/31/98	0	0	1
	1/1/99-12/31/99	0	0	0
	1/1/00-12/31/00	0	0	1
	1/1/01-12/31/01	0	0	4
	1/1/02-2/28/02	0	0	1
Genesee Street: Congress Ave. to Terrace Park	1/1/98-12/31/98	0	0	0
	1/1/99-12/31/99	0	0	0
	1/1/00-12/31/00	0	0	1
	1/1/01-12/31/01	0	0	1
	1/1/02-2/28/02	0	0	0
Terrace Park: Genesee St. to Woodbine	1/1/98-12/31/98	0	0	0
	1/1/99-12/31/99	0	0	0
	1/1/00-12/31/00	0	0	3
	1/1/01-12/31/01	0	0	0
	1/1/02-2/28/02	0	0	1

Table 5 - Type of Accident by Year (Continued)

<u>Intersection</u>	<u>Period</u>	<u>Fatality</u>	<u>Injury</u>	<u>Property Damage Only (PDO)</u>
Genesee Street: Terrace Park to Brooks Ave.	1/1/98-12/31/98	0	1	1
	1/1/99-12/31/99	0	0	1
	1/1/00-12/31/00	0	0	2
	1/1/01-12/31/01	0	0	1
	1/1/02-2/28/02	0	0	0
Genesee Street: Brooks Ave. to Barton St.	1/1/98-12/31/98	0	0	1
	1/1/99-12/31/99	0	0	3
	1/1/00-12/31/00	0	0	0
	1/1/01-12/31/01	0	0	3
	1/1/02-2/28/02	0	0	0
Brooks Avenue: Marsh St. to Genesee St.	1/1/98-12/31/98	0	0	0
	1/1/99-12/31/99	0	0	1
	1/1/00-12/31/00	0	0	2
	1/1/01-12/31/01	0	0	0
	1/1/02-2/28/02	0	0	0
Brooks Avenue: Genesee St. to S. Plymouth Ave.	1/1/98-12/31/98	0	0	1
	1/1/99-12/31/99	0	0	0
	1/1/00-12/31/00	0	0	1
	1/1/01-12/31/01	0	0	0
	1/1/02-2/28/02	0	0	0
South Plymouth Avenue: Brooks Ave. to Barton St.	1/1/98-12/31/98	0	0	0
	1/1/99-12/31/99	0	0	1
	1/1/00-12/31/00	0	0	1
	1/1/01-12/31/01	0	0	1
	1/1/02-2/28/02	0	0	0
South Plymouth Avenue: Brooks Ave. to Elmwood Ave.	1/1/98-12/31/98	0	1	1
	1/1/99-12/31/99	0	3	0
	1/1/00-12/31/00	0	0	0
	1/1/01-12/31/01	0	2	2
	1/1/02-2/28/02	0	0	0
Elmwood Avenue: S. Plymouth Ave. to Gen. River Br.	1/1/98-12/31/98	0	0	1
	1/1/99-12/31/99	0	1	1
	1/1/00-12/31/00	0	1	3
	1/1/01-12/31/01	0	1	2
	1/1/02-2/28/02	0	0	0

As provided in Table 5, 18 percent of the accidents resulted in injury, 82 percent of the accidents resulted in property damage only and none of the accidents resulted in death.

Genesee Street/Scottsville Road & Elmwood Avenue

Seven accidents were reported at this intersection. Six accidents were rear-end accidents and one was an overtaking accident. Of these accidents two resulted in injury, while the remaining five accidents were reported as property damage only.

A closer look at the accidents at this intersection revealed that the rear end accidents were the result of human error (following too closely or driver inattention). Also worth noting is that each of the rear end accidents involved vehicles traveling in the eastbound direction on Scottsville Road.

Genesee Street/Genesee Park Boulevard

Two accidents were reported at this intersection. One was a single vehicle accident and one was a bicycle accident. Both accidents resulted in injury.

Genesee Street/Weldon Street

One accident was reported at this intersection. The accident was a rear-end accident that resulted in property damage only.

Genesee Street/Oak Hill View

One accident was reported at this intersection. The accident was a rear-end accident that resulted in injury.

Genesee Street/Congress Avenue

Four accidents were reported at this intersection. One accident was a rear end accident, one was a right-turn accident, one was a pedestrian accident, and one was an overtaking accident. Of these accidents, two resulted in injury and two were reported as property damage only.

Genesee Street/Terrace Park

Three accidents were reported at this intersection. Two accidents were single vehicle accidents and one was a rear end accident. Of these accidents, all were reported as property damage only.

Genesee Street/Brooks Avenue

Twenty-eight accidents were reported at this intersection. Nine accidents were rear end accidents, five were left-turn accidents, one was a right-turn accident, one was a bicycle accident, nine were right angle accidents, and three were overtaking accidents. Of these accidents, three resulted in injury with the remaining twenty-five reported as property damage only.

A closer look at the accidents at this intersection revealed that eight of the nine rear end accidents were the result of human error (following too closely or driver inattention). Also worth noting is that seven of the nine right angle accidents were the result of drivers failing to yield the right-of-way or disregarding the traffic signal.

Brooks Avenue/South Plymouth Avenue

Fifteen accidents were reported at this intersection. Three accidents were single vehicle accidents, four were rear end accidents, one was a head-on accident, four were left-turn accidents, two were right-turn accidents, and one was a sideswipe accident. Two of these accidents resulted in injury, while the other thirteen resulted in property damage only.

A closer look at the accidents at this intersection revealed that no real accident pattern exists, although three of the four right angle accidents involved drivers failing to yield the right-of-way and three of the four rear end accidents involved either driver inattention or following too closely.

Elmwood Avenue/South Plymouth Avenue & Genesee Valley Park

Twenty-five accidents were reported at this intersection. Three accidents were single vehicle accidents, fifteen were rear end accidents, five were right-angle accidents, and two were overtaking accidents. Three of these accidents resulted in injury, while the remaining twenty-two resulted in property damage only.

A closer look at the accidents at this intersection revealed that twelve of the fifteen rear end accidents involved either driver inattention or following too closely, and three of the five right angle accidents involved drivers failing to yield the right-of-way or disregarding the traffic signal. Eleven of the fifteen rear end accidents involved westbound vehicles on Elmwood Avenue.

Genesee Street: From Mineola Street to Elmwood Avenue

One accident was reported along this midblock section. The accident was a single vehicle accident that resulted in property damage only.

Scottsville Road: From Winbourne Road to Genesee Street

Four accidents were reported along this midblock section. One accident was a rear end accident, one was a backing accident, and two were overtaking accidents. One of these accidents resulted in injury, while the remaining three resulted in property damage only.

Elmwood Avenue: From Genesee Street to South Plymouth Avenue

Eleven accidents were reported along this midblock section. One accident was a single vehicle accident, five were rear end accidents, one was a backing accident, one was a right-turn accident, and three were overtaking accidents. One of these accidents resulted in injury, while the remaining ten resulted in property damage only.

Genesee Park Boulevard: From Custer Street to Genesee Street

Three accidents were reported along this midblock section. The accidents were backing accidents, with one resulting in injury and the remaining two resulting in property damage only.

Genesee Street: From Genesee Park Boulevard to Arvine Heights

One accident was reported along this midblock section. The accident was a single vehicle accident that resulted in property damage only.

Weldon Street: From Custer Street to Genesee Street

One accident was reported along this midblock section. The accident was a backing accident that resulted in property damage only.

Arvine Park: From Arvine Park to Genesee Street

One accident was reported along this midblock section. The accident was a backing accident that resulted in property damage only.

Genesee Street: From Spruce Avenue to Grandview

Two accidents were reported along this midblock section. One accident was a single vehicle accident and one was an overtaking accident. One accident resulted in injury while the other accident resulted in property damage only.

Congress Avenue: From Custer Street to Genesee Street

Seven accidents were reported along this midblock section. One accident was a single vehicle accident, two were rear end accidents, two were backing accidents, one was a right-turn accident, and one was an overtaking accident. All seven accidents resulted in property damage only.

Genesee Street: From Congress Avenue to Terrace Park

Two accidents were reported along this midblock section. One accident was a single vehicle accident and one was a rear end accident. Both accidents resulted in property damage only.

Terrace Park: From Genesee Street to Woodbine

Four accidents were reported along this midblock section. One accident was a single vehicle accident, one was a rear end accident, and two were backing accidents. All four accidents resulted in property damage only.

Genesee Street: From Terrace Park to Brooks Avenue

Six accidents were reported along this midblock section. Two accidents were single vehicle accidents, two were rear end accidents, one was a backing accident, and one was a right-turn accident. One of the accidents resulted in injury while the remaining five accidents resulted in property damage only.

Genesee Street: From Brooks Avenue to Barton Street

Seven accidents were reported along this midblock section. Two accidents were single vehicle accidents, four were backing accidents, and one was an overtaking accident. All seven accidents resulted in property damage only.

Brooks Avenue: From Marsh Street to Genesee Street

Three accidents were reported along this midblock section. One accident was a single vehicle accident, one was a rear end accident, and one was a right-angle accident. All three accidents resulted in property damage only.

Brooks Avenue: From Genesee Street to South Plymouth Avenue

Two accidents were reported along this midblock section. One accident was a rear end accident and one was an overtaking accident. Both accidents resulted in property damage only.

South Plymouth Avenue: From Brooks Avenue to Barton Street

Three accidents were reported along this midblock section. One accident was a single vehicle accident, one was a left-turn accident, and one was an overtaking accident. All three of these accidents resulted in property damage only.

South Plymouth Avenue: From Brooks Avenue to Elmwood Avenue

Nine accidents were reported along this midblock section. One accident was a single vehicle accident, two were rear end accidents, one was a head-on accident, one was a left-turn accident, one was a bicycle accident, two were overtaking accidents, and one was reported as an other accident. Six of these accidents resulted in injury while the remaining three resulted in property damage only.

Elmwood Avenue: From South Plymouth Avenue to Genesee River Bridge

Ten accidents were reported along this midblock section. All ten accidents were rear end accidents, with three resulting in injury and the remaining seven resulting in property damage only.

For the fifty-month period analyzed, the average accident rates were calculated for each intersection and segment and compared to the statewide average accident rates. A summary of these rates is provided in Table 6.

Table 6 - Accident Rate Summary

<u>Intersection</u>	<u>Calculated Rate</u>	<u>County Wide Average Rate</u>
Genesee Street @ Scottsville Rd./Elmwood Ave.	0.27 acc/mev	0.80 acc/mev
Genesee Street @ Genesee Park Boulevard	0.17 acc/mev	0.42 acc/mev
Genesee Street @ Weldon Street	0.12 acc/mev	0.03 acc/mev
Genesee Street @ Oak Hill View	0.12 acc/mev	0.03 acc/mev
Genesee Street @ Congress Avenue	0.46 acc/mev	0.03 acc/mev
Genesee Street @ Terrace Park	0.35 acc/mev	0.03 acc/mev
Genesee Street @ Brooks Avenue	1.04 acc/mev	0.80 acc/mev
Brooks Avenue @ South Plymouth Avenue	0.62 acc/mev	0.80 acc/mev
Elmwood Avenue @ S. Plymouth Ave./Gen. Valley Pk.	0.69 acc/mev	0.80 acc/mev
<u>Midblock:</u>		
Genesee Street: Mineola St. to Elmwood Ave.	6.92 acc/mvm	1.54 acc/mvm
Scottsville Road: Winbourne Rd. to Genesee St.	3.33 acc/mvm	1.54 acc/mvm
Elmwood Avenue: Genesee St. to S. Plymouth Ave.	1.67 acc/mvm	3.81 acc/mvm
Genesee Park Boulevard: Custer St. to Genesee St.	5.76 acc/mvm	4.40 acc/mvm
Genesee Street: Gen. Pk. Blvd. to Arvine Hgts.	6.38 acc/mvm	1.54 acc/mvm
Weldon Street: Custer St. to Genesee St.	11.95 acc/mvm	6.79 acc/ mvm

Table 6 - Accident Rate Summary (Continued)

<u>Midblock</u>	<u>Calculated Rate</u>	<u>County Wide Average Rate</u>
Arvine Park:		
Arvine Park to Genesee St.	18.77 acc/mvm	6.79 acc/mvm
Genesee Street:		
Spruce Ave. to Grandview	5.10 acc/mvm	1.54 acc/mvm
Congress Avenue:		
Custer St. to Genesee St.	54.11 acc/mvm	6.79 acc/mvm
Genesee Street:		
Congress Ave. to Terrace Park	3.64 acc/mvm	1.54 acc/mvm
Terrace Park:		
Genesee St. to Woodbine	11.68 acc/mvm	6.79 acc/mvm
Genesee Street:		
Terrace Park to Brooks Ave.	10.93 acc/mvm	1.54 acc/mev
Genesee Street:		
Brooks Ave. to Barton St.	4.52 acc/mvm	3.81 acc/mvm
Brooks Ave.:		
Marsh St. to Genesee St.	3.77 acc/mvm	3.81 acc/mvm
Brooks Avenue:		
Genesee St. to S. Plymouth Ave.	2.52 acc/mvm	3.81 acc/mvm
South Plymouth Avenue:		
Brooks Ave. to Barton St.	0.70 acc/mvm	1.54 acc/mvm
South Plymouth Avenue:		
Brooks Ave. to Elmwood Ave.	1.18 acc/mvm	1.54 acc/mvm
Elmwood Avenue:		
S. Plymouth Ave. to Gen. River Br.	4.27 acc/mvm	3.81 acc/mvm

As shown in Table 6, for the fifty month period from January 1, 1998 to February 28, 2002 the calculated accident rates for the following intersections were higher than the County rates for similar intersections: Genesee Street at Weldon Street; Genesee Street at Oak Hill View; Genesee Street at Congress Avenue; Genesee Street at Terrace Park; and Genesee Street at Brooks Avenue.

- Of the one accident that occurred at Genesee Street at Weldon Avenue, there is no observable accident pattern at this location.

- Of the one accident that occurred at Genesee Street at Oak Hill View, there is no observable accident pattern at this location.
- Of the four accidents that occurred at Genesee Street at Congress Avenue, there is no observable accident pattern at this location.
- Of the three accidents that occurred at Genesee Street at Terrace Park, there is no observable accident pattern at this location.
- Of the twenty-eight accidents that occurred at Genesee Street at Brooks Avenue, there appears to be a rear end and a right angle accident pattern at this location. With the abandonment of South Plymouth Avenue between Brooks Avenue and Elmwood Avenue, more traffic will be redirected through this intersection. As a result of the additional traffic, it is recommended to restripe each of the lanes as well as remove any sight obstructions to help alleviate the potential for rear end and right angle accidents at this location. Additionally, advance signal warning signs (MUTCD W2-17C) are recommended at the westbound approach to the intersection.

The calculated accident rates at the following linear sections within the study area were higher than the County rates for similar midblock sections: Genesee Street from Mineola Street to Elmwood Avenue; Scottsville Road from Winbourne Road to Genesee Street; Genesee Park Boulevard from Custer Street to Genesee Street; Genesee Street from Genesee Park Boulevard to Arvine Heights; Weldon Street from Custer Street to Genesee Street; Arvine Park from Arvine Park to Genesee Street; Genesee Street from Spruce Avenue to Grandview; Congress Avenue from Custer Street to Genesee Street; Genesee Street from Congress Avenue to Terrace Park; Terrace Park from Genesee Street to Woodbine; Genesee Street from Terrace Park to Brooks Avenue; Genesee Street from Brooks Avenue to Barton Street; and Elmwood Avenue from South Plymouth Avenue to the Genesee River Bridge.

- Of the one accident that occurred on Genesee Street from Mineola Street to Elmwood Avenue, there is no observable accident pattern at this location.
- Of the four accidents that occurred on Scottsville Road from Winbourne Road to Genesee Street, there is no observable accident pattern at this location.
- Of the three accidents that occurred on Genesee Park Boulevard from Custer Street to Genesee Street, all three accidents were backing accidents that occurred during the day as a result of the backing drivers failure to yield the right-of-way.

- Of the one accident that occurred on Genesee Street from Genesee Park Boulevard to Arvine Heights, there is no observable accident pattern at this location.
- Of the one accident that occurred on Weldon Street from Custer Street to Genesee Street, there is no observable accident pattern at this location.
- Of the one accident that occurred on Arvine Park from Arvine Park to Genesee Street, there is no observable accident pattern at this location.
- Of the two accidents that occurred on Genesee Street from Spruce Avenue to Grandview, there is no observable accident pattern at this location.
- Of the seven accidents that occurred on Congress Avenue from Custer Street to Genesee Street, there is no observable accident pattern at this location.
- Of the two accidents that occurred on Genesee Street from Congress Avenue to Terrace Park, there is no observable accident pattern at this location.
- Of the four accidents that occurred on Terrace Park from Genesee Street to Woodbine, there is no observable accident pattern at this location.
- Of the six accidents that occurred on Genesee Street from Terrace Park to Brooks Avenue, there is no observable accident pattern at this location.
- Of the seven accidents that occurred on Genesee Street from Brooks Avenue to Barton Street, four were backing accidents in which two of the accidents involved a vehicle backing into a parked vehicle on the east side of Genesee Street and two of the accidents involved a vehicle backing into a parked vehicle on the west side of Genesee Street.
- Of the ten accidents that occurred on Elmwood Avenue from South Plymouth Avenue to the Genesee River Bridge, all were rear end accidents (five in the eastbound direction and five in the westbound direction). Although there are ten rear end accidents at this location, there is no observable accident pattern (i.e. same time of day, wet road, lane changing, etc.). It is anticipated that with the closure of South Plymouth Avenue and the addition of the Brooks Landing development, no new accident pattern will develop at this location.

Further review of the 163 reportable accidents is summarized in Table 7, on the following page.

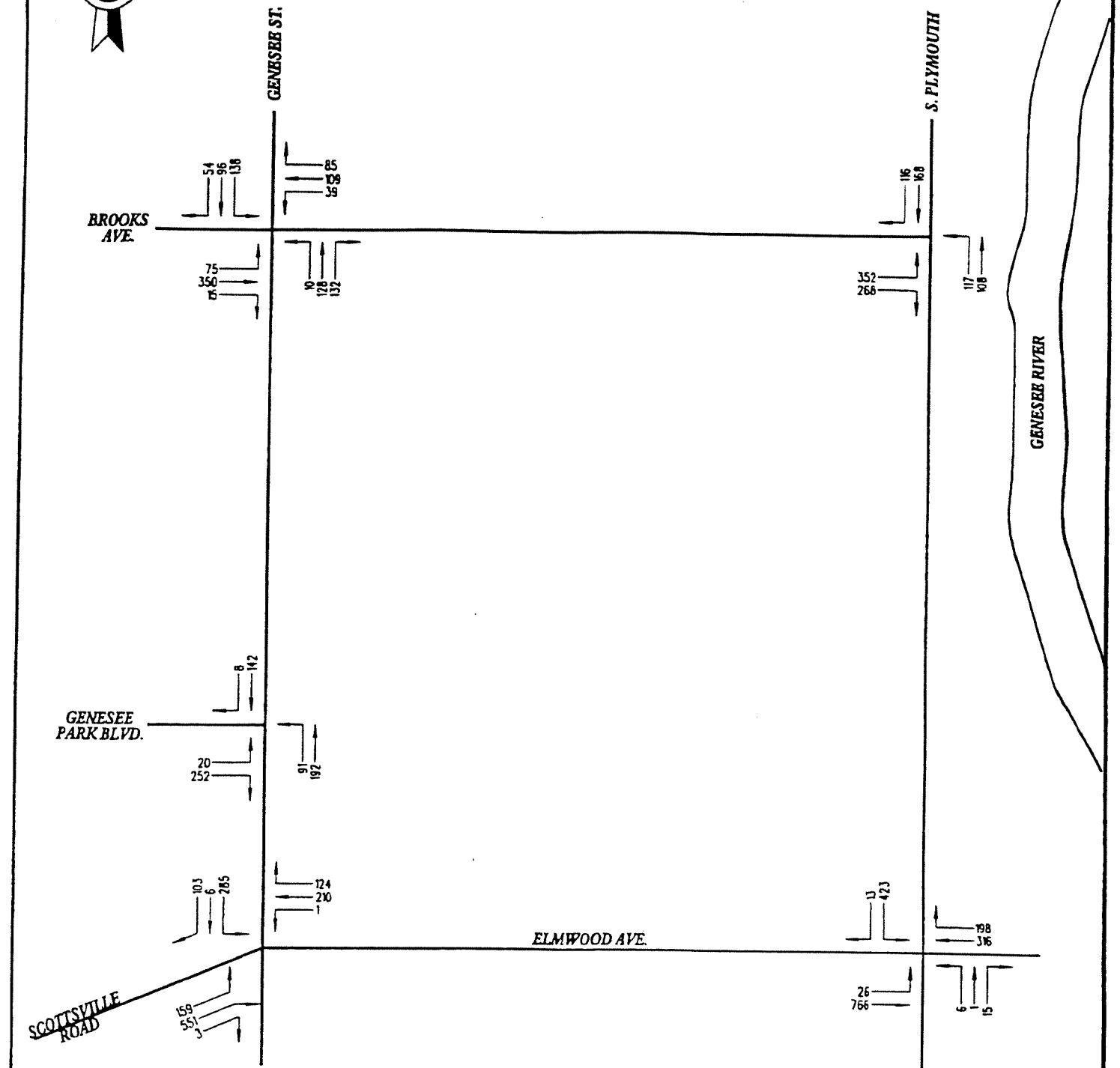


FIGURE 1

**EXISTING TRAFFIC VOLUMES
WEEKDAY MORNING PEAK HOUR**

FRA ENGINEERING, P.C.

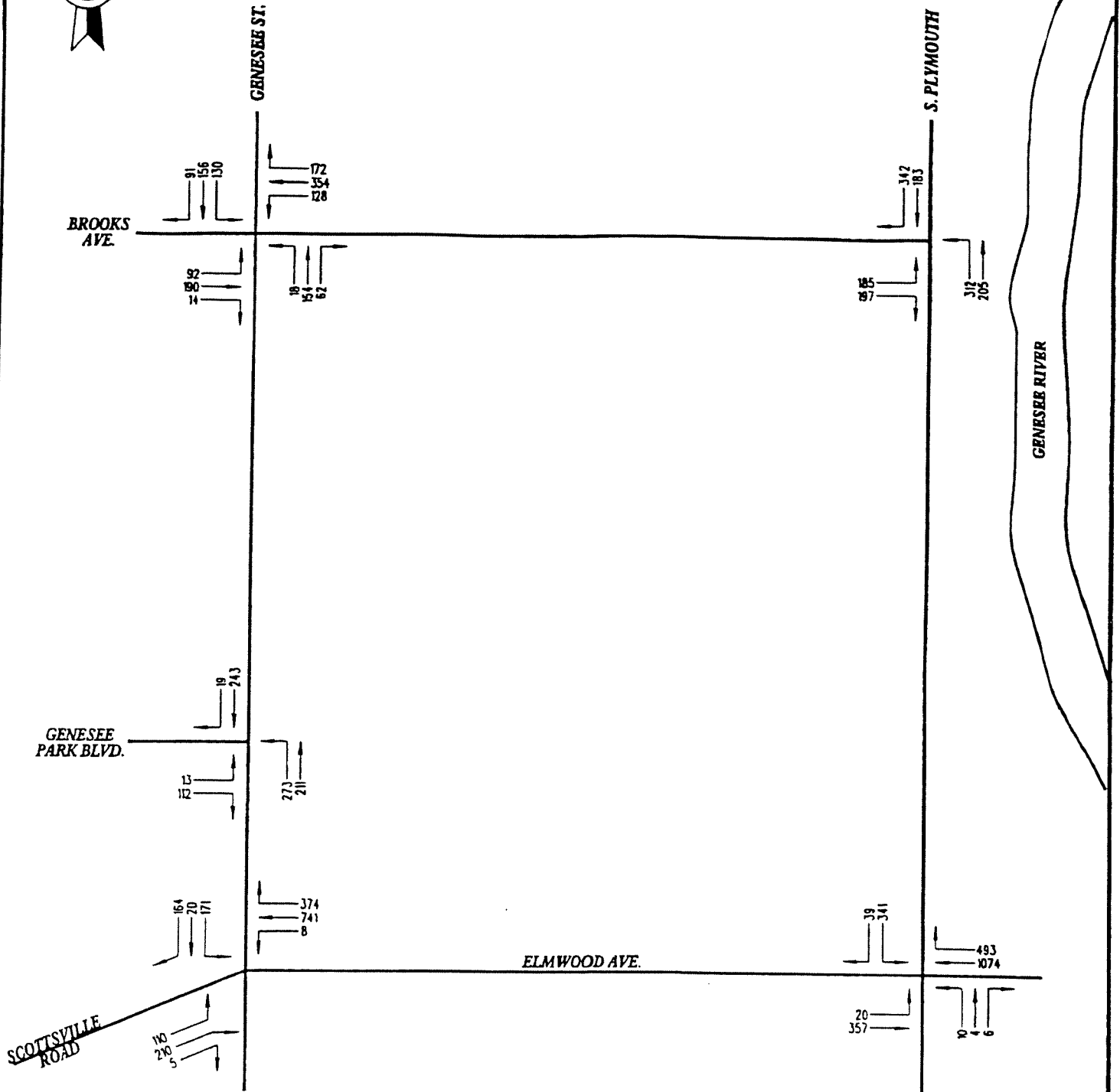


FIGURE 2

**EXISTING TRAFFIC VOLUMES
WEEKDAY EVENING PEAK HOUR**

FRA ENGINEERING, P.C.

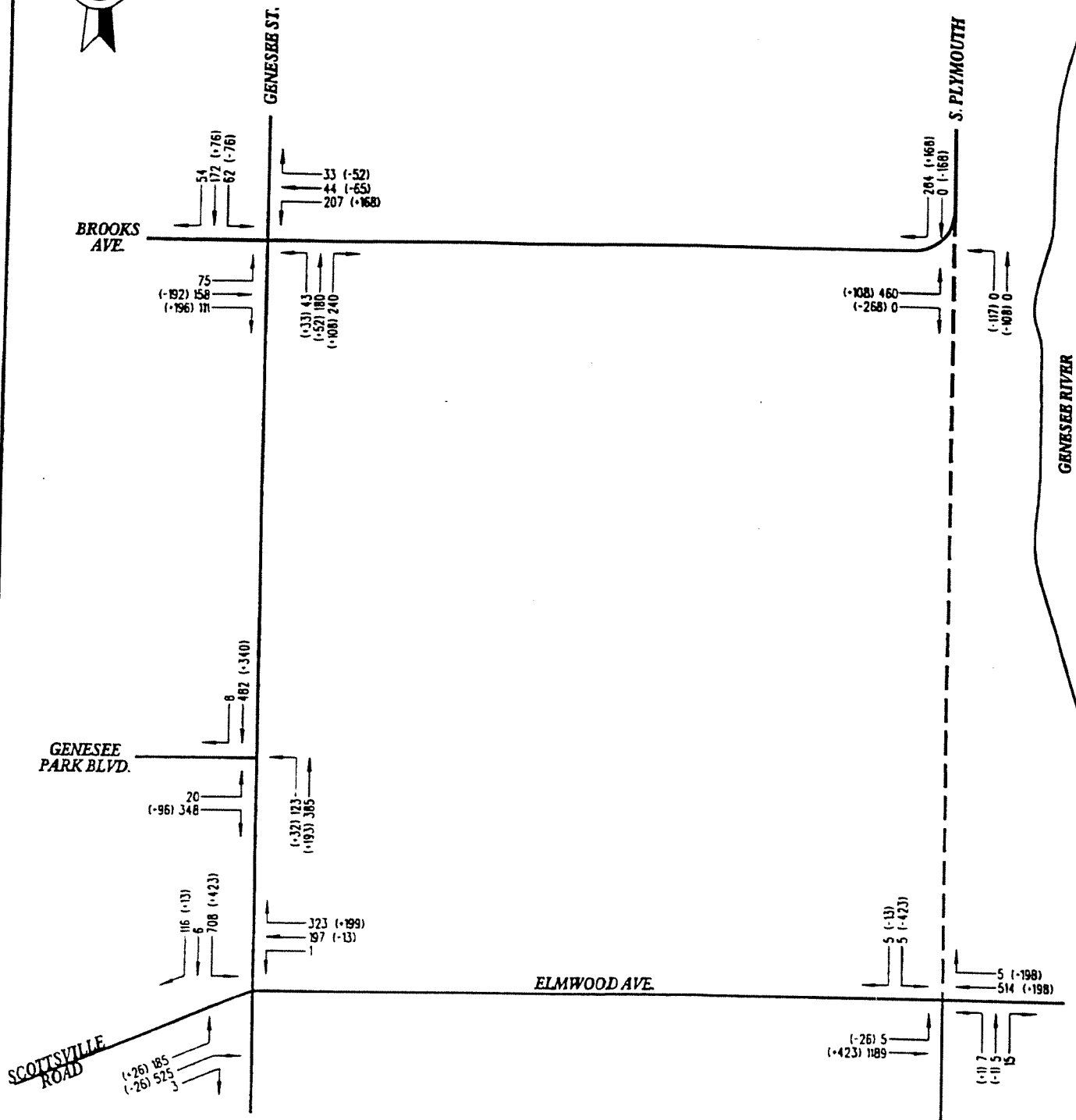


FIGURE 3

**WEEKDAY MORNING
CHANGE IN PEAK HOUR VOLUMES**

FRA ENGINEERING, P.C.

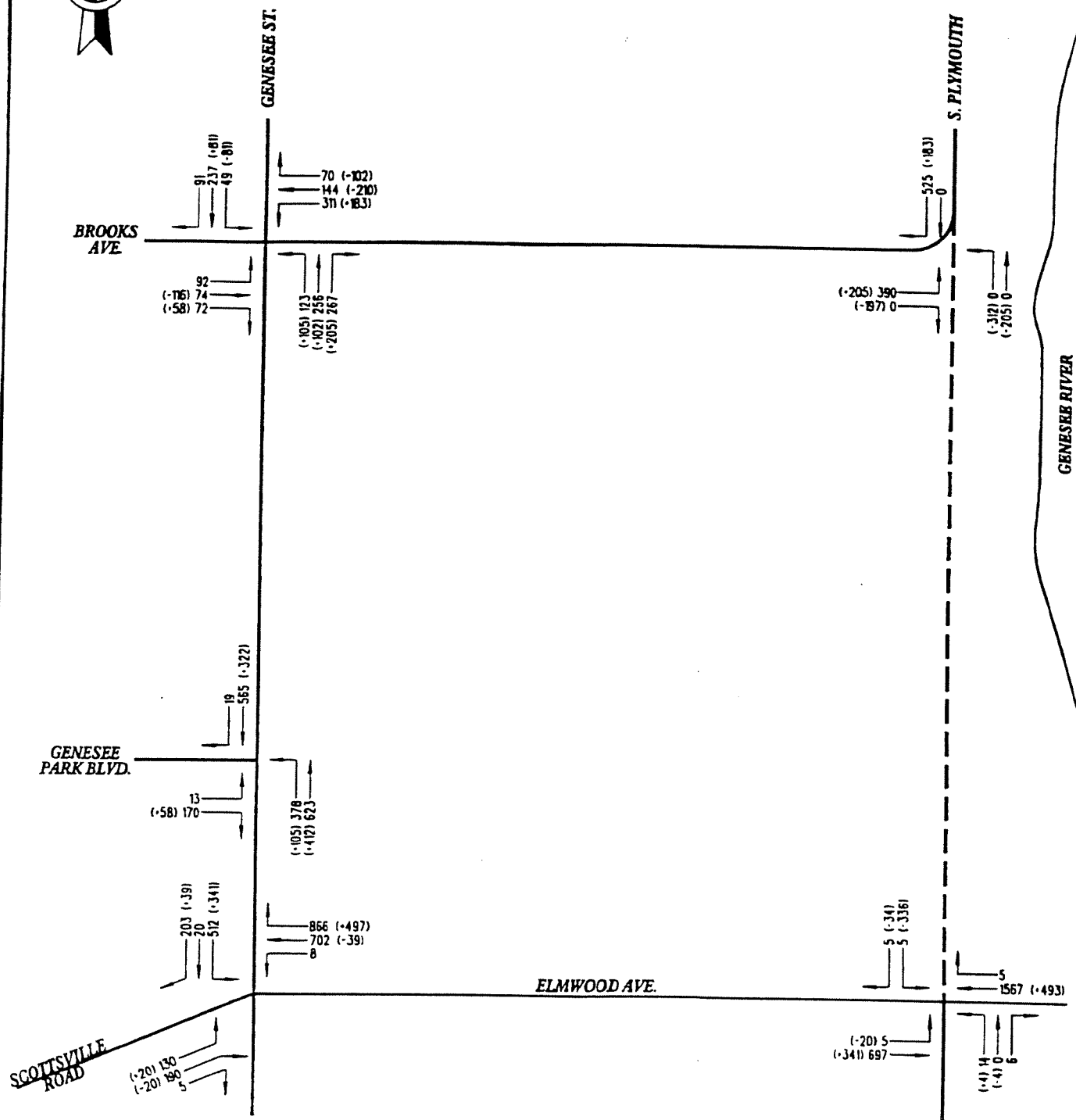


FIGURE 4

WEEKDAY EVENING
CHANGE IN PEAK HOUR VOLUMES

FRA ENGINEERING, P.C.

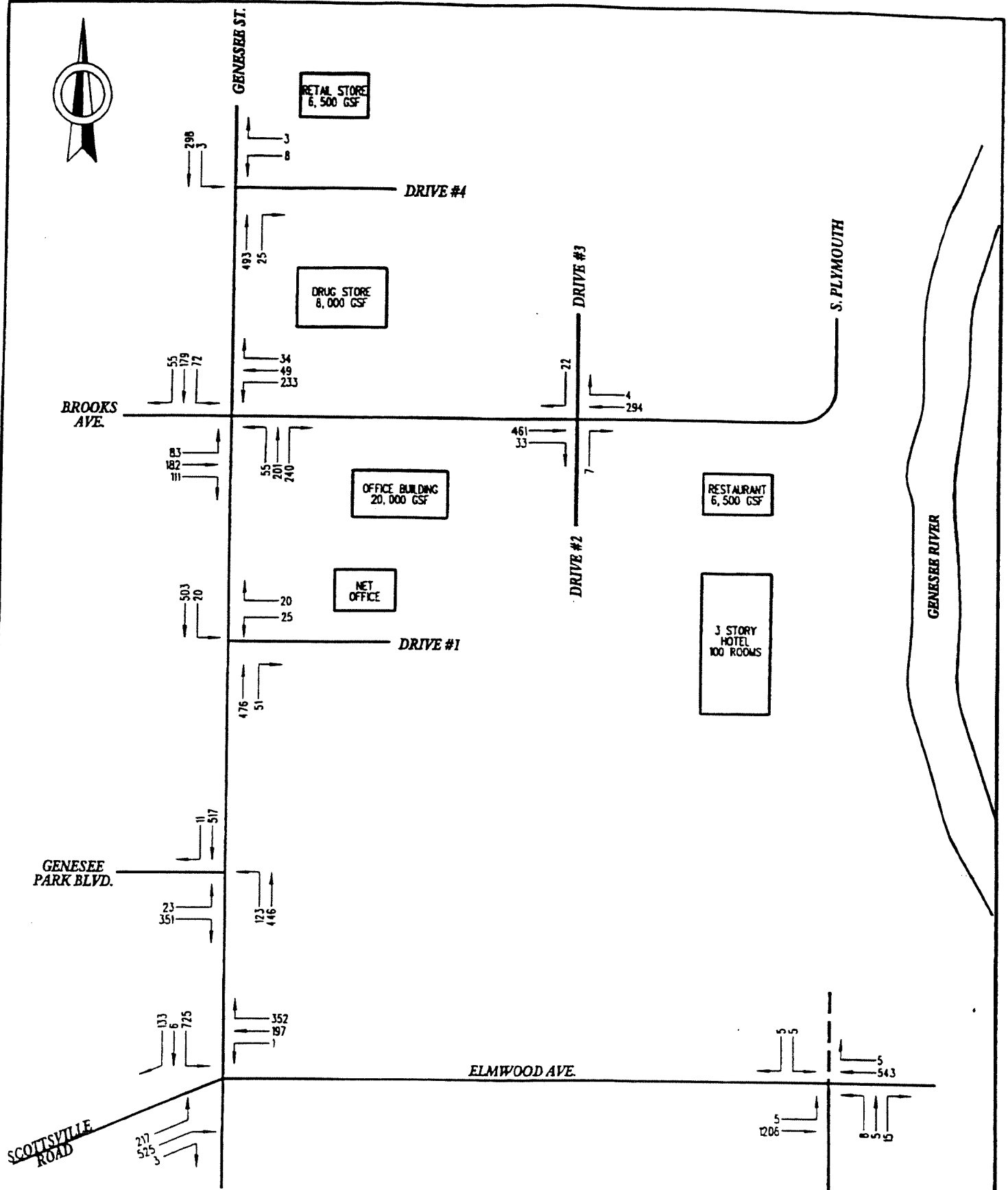


FIGURE 5

**FUTURE TRAFFIC VOLUMES
AM PEAK HOUR**

FRA ENGINEERING, P.C.

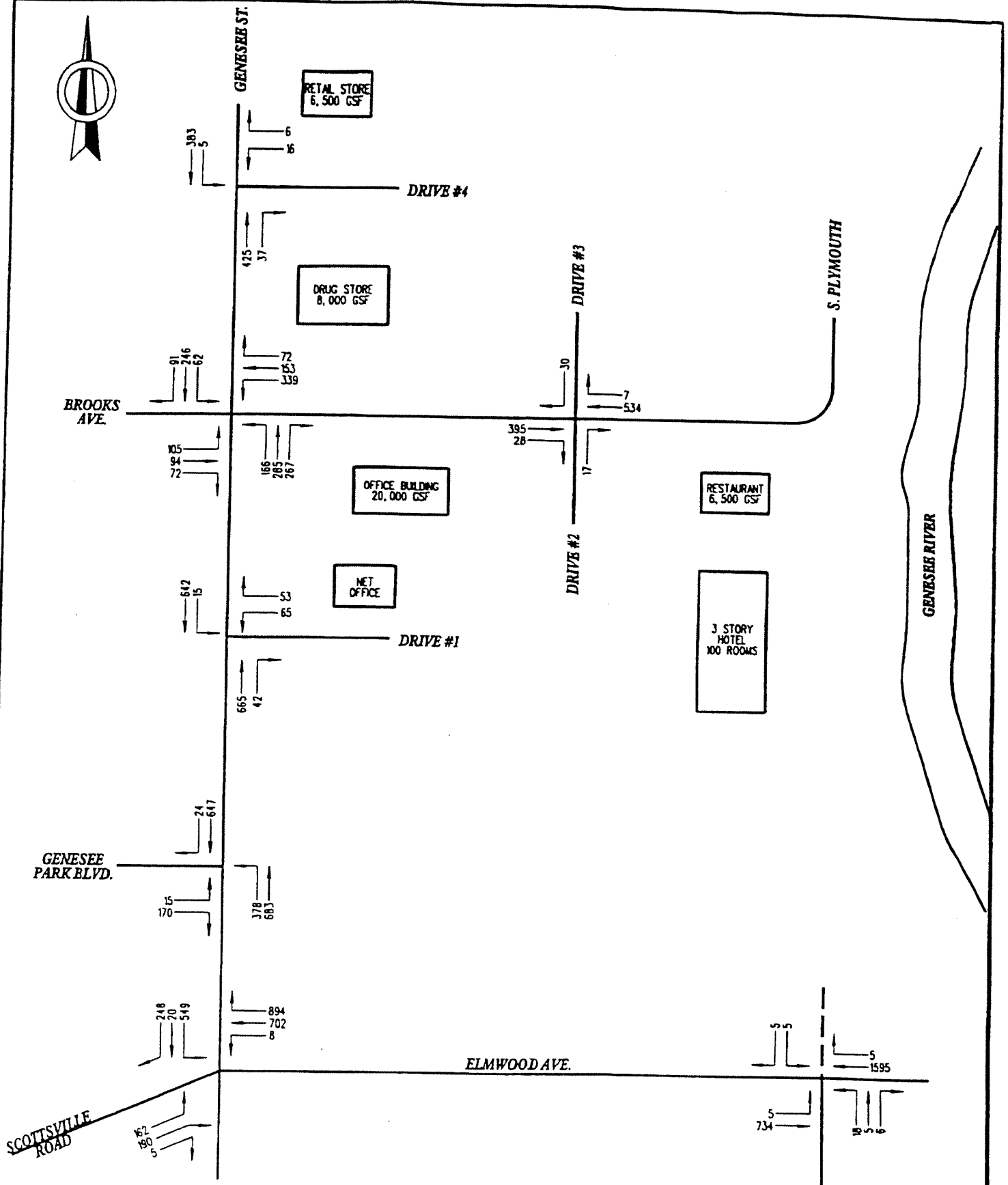
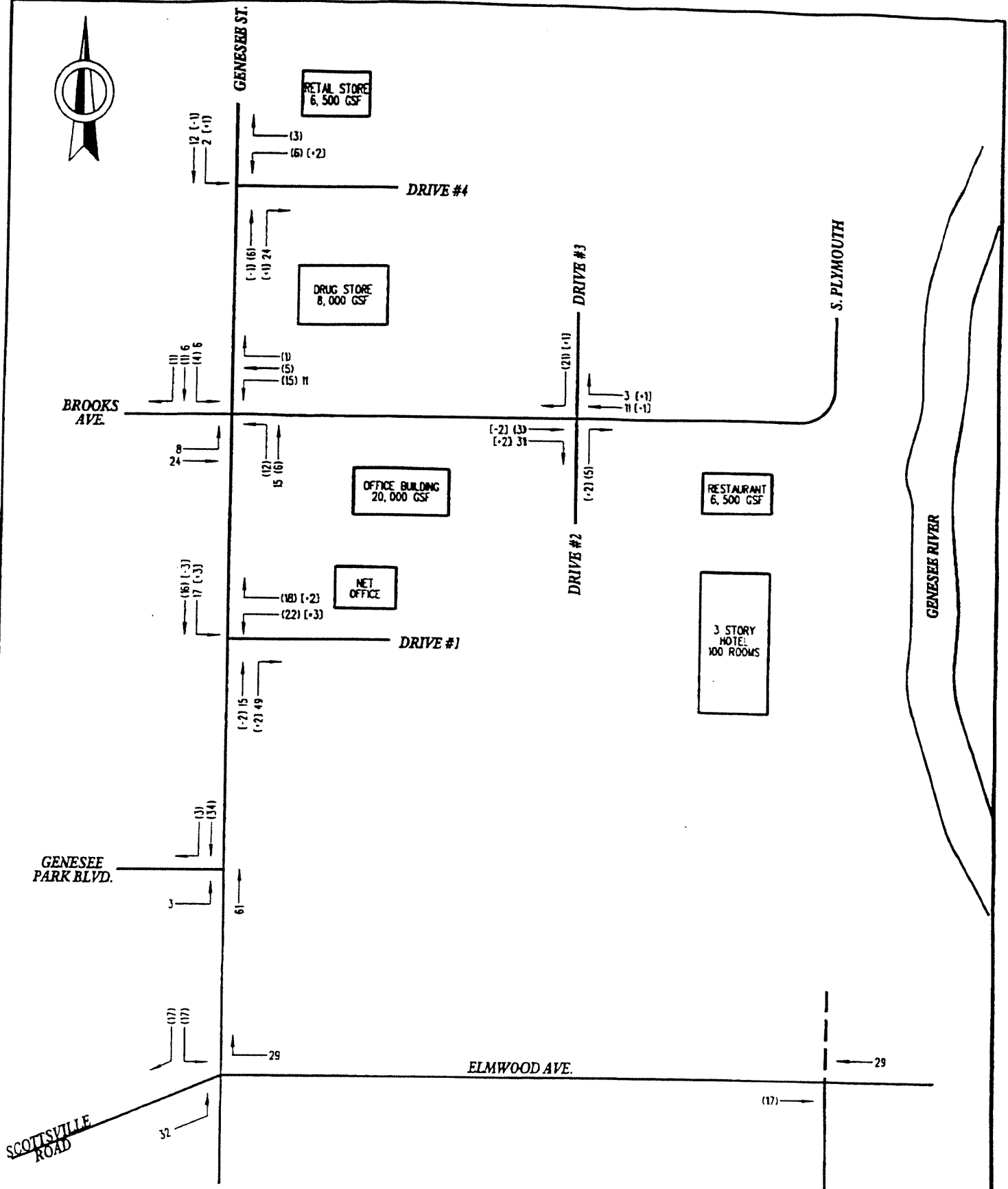


FIGURE 6

**FUTURE TRAFFIC VOLUMES
PM PEAK HOUR**



LEGEND

XX - ENTERING TRIPS
OXX - EXITING TRIPS
DOX - PASS-BY TRIPS

FIGURE 8

**PRIMARY/PASS-BY TRIPS
DEVELOPMENT TRAFFIC
AM PEAK HOUR**

FRA ENGINEERING, P.C.

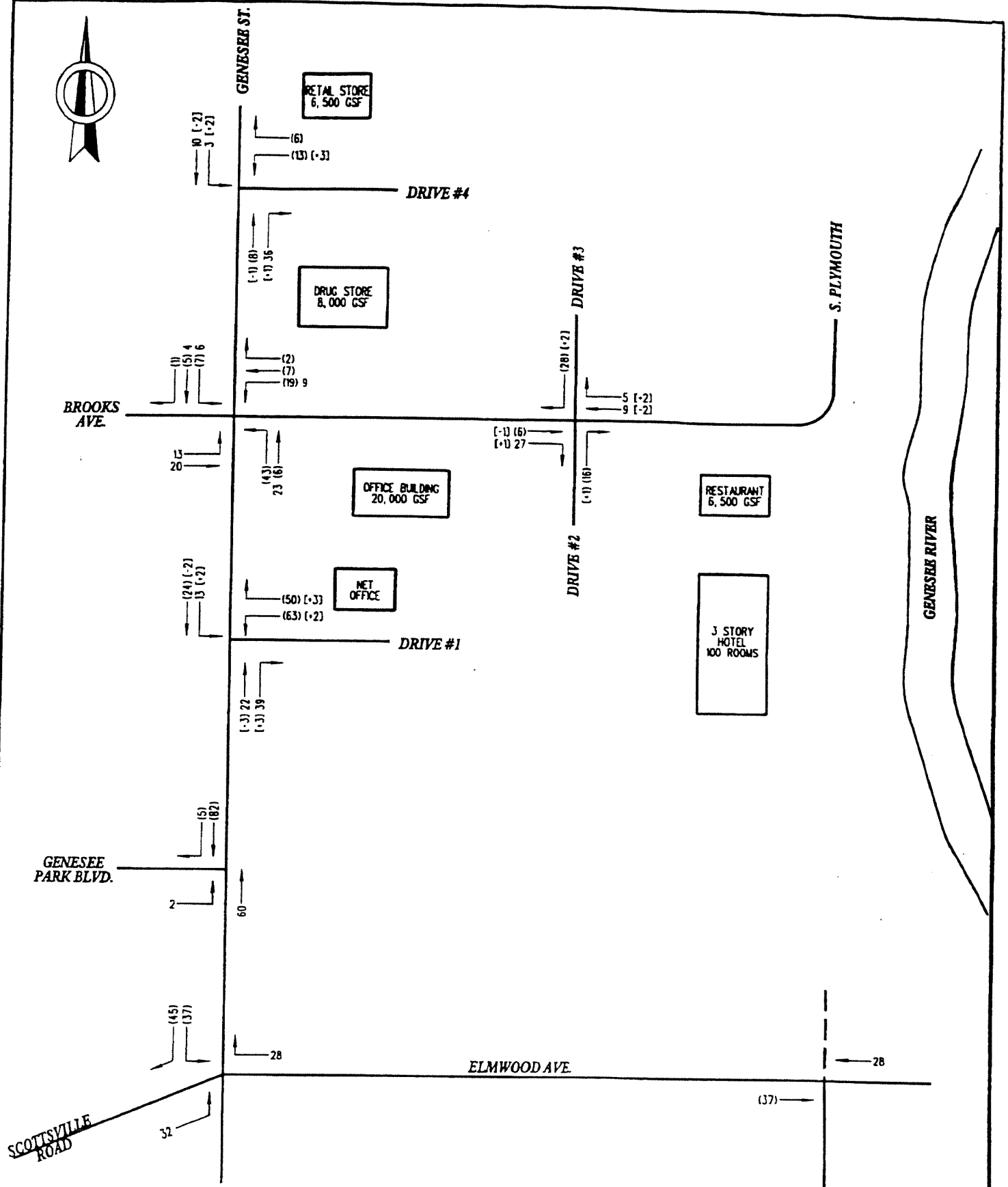


Table 2 - Estimated Daily Traffic Volumes

Segment	Existing (ETC)	Traffic Volume	
		ETC+10	ETC+20
South Plymouth			
N. of Brooks Avenue	9,386	11,263	13,140
N. of Elmwood Avenue	12,438	14,926	17,413
Genesee Street			
N. of Brooks	10,183	12,220	14,256
N. of Genesee Park Boulevard	5,152	6,182	7,213
Brooks Avenue			
W. of Genesee Street	8,706	10,447	12,188
Elmwood Avenue			
W. of South Plymouth Avenue	17,098	20,518	23,937
Scottsville road			
S. of Elmwood Avenue	11,264	13,517	15,770

Pm Peak hour total trips = 319

assume ADT = $319 \times 10 = 3,190$ trips

based on trip distribution (Figure 7):

<u>Segment</u>	<u>ADT w/development</u>
S. Plymouth	
N. of Brooks	
N. of Elmwood	9,769
	_____ (road removed)
Genesee	
N. of Brooks	
N. of Gen. Pk. Blvd.	10,566
Brooks	
W. of Gen.	6,747
Elmwood	
W. of S. Plymouth	9,535
Scottsville	
S. of Elmwood	17,832
	12,062

Not all traffic to and from the proposed development will be primary or new trips added to the surrounding network. A primary trip is one in which the potential customer makes a special trip to the proposed development, going out of the way to stop at the facility. A pass-by trip is one in which a potential customer makes an unscheduled stop at a proposed development. For Brooks Landing, a conservative pass-by credit of 10 percent was used in this analysis for all uses except the office building.

A summary of the trips to be generated by the proposed development is provided below. Refer to Appendix C for trip generation calculations, pass-by calculations, and traffic count data.

Table 1
Trip Generation Summary

PROPOSED USE	WEEKDAY AM			WEEKDAY PM		
	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
100 Room Hotel	25	16	41	24	22	46
20,000 Office Building	46	6	52	17	85	102
6,500 Restaurant	31	29	60	43	28	71
6,500 Retail Store	20	22	42	7	10	17
8,000 Drug Store	12	9	21	41	42	83
TOTAL TRIPS	134	82	216	132	187	319
PASS-BY (10% FOR 1, 3 - 5)*	(10)	(8)	(18)	(11)	(10)	(21)
PRIMARY TRIPS	124	74	198	121	177	298

*Based on our past experience, and the land use in the area, a conservative pass-by credit of 10% is proposed.

VI. TRIP ASSIGNMENT AND DISTRIBUTION

The projected trips to be generated by the proposed development were assigned to the adjacent transportation system based on existing traffic patterns and the results of the regional model. The primary/pass-by trip distribution for the weekday morning and evening peak hours is provided in Figure 7. The primary and pass-by trips for the morning and evening peak hours are provided in Figure 8 and Figure 9. Figures 7 thru 9 are provided in Appendix D.

As shown, approximately 12 percent of the site-generated traffic is anticipated to originate from the north, 25 percent from the south, 35 percent from the east, and 28 percent from the west.

The site generated traffic volumes were then added to the adjusted traffic volumes (South Plymouth Avenue abandonment) to determine future traffic volumes. Future traffic volumes are provided in Figure 5 and Figure 6.

